cination, and conſequently, that in Mixt Bodies there is no Fixt Alcaliſat ſalt at all, that is originally ſuch, but that all Volatil Salts are fixed by Calcination, by means of which the Earthy parts in them commixed are concoagulated with them; and that upon this ground the Volatiliſation of Fixed Salts may be eaſily perform'd by only ſeparating from them that Fixing Earth, ſaid to be commixed with them. 2. That in the Volatiliſation of Salt of Tartar, perform'd by the Fermentation of Dr. *Langelot*, 'tis not chiefly the Fixed Alcali of Tartar, that is again volatiliſed, but rather the Crude Tartar added for a ferment. 3. That in *Sal Armoniac* there are only thoſe two Salts, which he calls an Urinous and Acid, and both Volatil; whereas 'tis well known, that there is a Sea-ſalt in it, which contains many parts, that will for a long while endure a ſtrong fire.

## *Some Obſervations touching the Nature of* Snow, *preſented to the R. Society by Dr.* Nehemiah Grew.

IF thoſe great Philoſophers, *Ariſtotle* and *Carteſius*, and others, of their Followers, who have written of *Meteors*, and amongſt them of *Snow*, have not yet given us a full account hereof; it will not be needleſs to enquire further of it. He that will do this, will do it beſt, not by the purſuit of his phancy in a Chair, but with his Eyes abroad; where if we uſe them well fixed, and with good Caution, and this in a thin, calm and ſtill Snow, we may by degrees obſerve;

*Firſt*, with Monſieur *Des Cartes*, and Mr. *Hook*, that many parts hereof are of a regular figure; for the moſt part, as it were, ſo many little Rowells or Stars of 6 points; being perfect and tranſparent Ice, as any we ſee upon a pool or veſſel of water. Upon each of theſe 6 points, are ſet other collateral points, & thoſe always at the ſame angles, as are the main points themſelves.

*Next*, amongſt theſe irregular figures, though many of them are large and fair; yet, from theſe taking our firſt *Item*, many others, alike regular, but far leſs, may likewiſe be diſcover'd.

*Again*, amongſt theſe not only regular, but entire parts of Snow, looking ſtill more warily, we ſhall perceive, that there are divers others, indeed irregular, yet chiefly but the broken points, parcels and fragments of the regular ones.

*Laſtly*, that,beſides the broken parts, there are ſome others, which ſeem to have loſt their regularity, not ſo much in being broken, as by various winds, firſt gently thaw'd, and then froze into little irregular clumpers again.

From whence the true notion and External nature of Snow ſeemeth to appear, *viz.*That not only ſome few parts of Snow, but, Originally, the whole body of it or of a Snowy cloud, is an infinite maſs of Icicles regularly figur'd; not one particle thereof, I ſay,*Originally*, not one of ſo many millions, being indeterminate or irregular: That is to ſay,a Cloud of Vapours being gathered into drops, the ſaid drops forthwith deſcend; upon which deſcent, meeting with a ſoft freezing wind, or at leaſt paſſing through a Colder Region of Air, each drop is immediately froze into an Icicle, ſhooting it ſelf forth into ſeveral points or *ſtiriæ* on each hand from-ward itsCenter:But ſtill continuing their deſcent, and meeting with ſome ſprinkling and intermixed gales of warmer air, or in their continual motion and waſtage to and fro touching upon each other; ſome are a little thaw'd, blunted, froſted, clumper'd, others broken, but the moſt hanked and clung in ſeveral parcels together, which we call Flakes of ſnow.

It being known what *Snow* is, we underſtand, why, though it ſeem to be ſoft, yet 'tis truly hard; becauſe true Ice, the inſeparable property whereof is, to be hard; ſeeming only to be ſoft, becauſe upon the firſt touch of the finger upon any of its ſharp edges or points, they inſtantly thaw; or otherwiſe they would pierce our fingers as ſo many Lancets.

Why again, though Snow be true Ice, and ſo an hard and denſe body, yet very light; becauſe of the extream thinneſs of each Icicle in compariſon of its breadth. For ſo Gold,which though of all bodies the moſt ponderous, yet being beaten into leaves, rides upon the leaſt breath of Air; and ſo in all other bodies, where there is but little matter contained within large dimenſions, and poſſibly in no other Caſe.

Alſo how it is *white*, not becauſe hard; for there are many ſoft bodies white; but becauſe conſiſtent of parts all of them ſingly tranſparent, but being mixed together, appear white; as the parts of Froth, Glaſs, Ice, and other Tranſparent bodies, whether ſoft or hard.

Thus much for the *External* nature of Snow; let us next a little enquire into its *Eſſential* nature.

Now if we would make a judgment of this, I think we may beſt do it by conſidering, what the general *Figure* of Snow is, and comparing the ſame with ſuch regular figures as we ſee in divers other bodies, in that where we ſee the like configurations, we may believe there is the like ſubject *wherein*, or the like efficient *whereby*, both thoſe and theſe are made.

As for the Figure of Snow, 'tis generally one. *viz.* that which is above deſcribed: Rarely of different ones, which may be reduced chiefly to two generals, Circulars and Hexagonals, either ſimple or compounded together. More rarely, either to be ſeen of more than 6 points; but if ſo, then not of 8 or 10, but 12. Or in ſingle ſhoots, as ſo many ſhort ſlender Cylinders, like thoſe of Nitre. Or by one of theſe ſhoots, as the Axle-tree, and touching upon the Centre of a pair of pointed Icicles, Joined together as the two wheels. Or the ſame hexagonal figure, and of the ſame uſual breadth; but continued in thickneſs or profundity, like the ſtone, which, as I remember, *Boetius* calls *Aſtroites*. All theſe, I ſay, are rare, the firſt deſcribed being the General figure.

As for the Configurations of other bodies, we ſhall find, that there are divers which have ſome a leſs, others a more near reſemblance hereunto. *Nitre* is formed, as is commonly known, into long Cylindrical ſhoots, as alſo all *Lixivial Salts* for the moſt part; reſembling, though not perfectly, the ſeveral points of each Starry Icicle of Snow. *Salt* of *Harts horn*, *Sal Armoniac*, and ſome other volatil Salts, beſides their main and longer ſhoots, have others, ſhorter branched out from them; reſembling as thoſe the main, ſo theſe the Collateral points of Snow. But the Icicles of *Urine* are ſtill more near: For, in Salt of Harts-horn, although the Collateral ſhoots ſtand at acute Angles with the main, yet not by pairs at equal height: And in *Sal Armoniac*, although they ſtand diametrically oppoſite, or at equal height; yet withall at right, not acute, angles: Whereas in the Icicles of Urine they ſtand at equal height, and at acute angles both; in both, like thoſe of ſnow. And it is obſervable, that the configuration of *Feathers* is likewiſe the ſame. The reaſon whereof is, becauſe Fowls having no organs for evacuation of Urine, the Urinous parts of their blood are evacuated by the habit or skin, where they produce and nouriſh feathers.

From hence it ſhould ſeem, That every drop of Rain aforeſaid, containing in it ſelf ſome Spirituous particles (as from the height, to which they are advanced, the prolifique virtue of Rain, and its eaſie tendency to putrefaction above other water, is argued they do,) and meeting with others in their deſcent, of a Saline, and that partly nitrous, but chiefly urinous, or of an acido-ſalinous nature; the ſaid Spirituous parts are apprehended by them, and with thoſe the watery, and ſo the whole drop is fixed; yet not into any indifferent and irregular ſhape, depriving the ſpirituous parts of their motion in an inſtant; but according to the energy of the Spirituous, as the Pencil, and the ſpecifick nature or determinate poſſibility of the ſaline parts as the Ruler, 'tis thus figur'd into a little Star. Theſe things ſomewhat further conſider'd and clear'd, may add a little to that great deal of light, which the *Honourable* Mr. *Boyl* hath given to the nature of Cold, the Air, and the Bodies therein contained, in his excellent Diſcourſes hereof.

## *A Confirmation, given by* Dr. Wallis, *of what was deliver'd in* Numb. 90. *about the* Strange Freezing *in* Somerſetſhire.

THE Strange Froſt (or Freezing rather) you give an account of to have hapned in *Somerſet-ſhire* in *December* laſt (though I remember not the day) was the like with us at *Oxford*. It was rather a Raining of Ice, or at leaſt Rain Freezing as it fell; which made ſtrange Icicles hanging on Trees, and a ſtrange noiſe by the ratling of them upon the Bows motion by the wind: But not ſo much as at the places you mention in *Somerſetſhire*. Yet more in the Country about us (as from ſeveral Relators I have heard,) than with us here. And the great Warmth ſoon after was alſo with us; inſomuch that not only Bloſſoms, but (as was then certainly affirm'd, though I was not ſo curious as to get a ſight of any,) green Apples on divers trees; particularly in the pariſh of *Holy-well*.